Installation instruction

Elan 25

BRINK

Climate Systems

Comfort, all year round

Installation instructions

Indirectly fired air heater
Elan 25

CE

STORE NEAR THE APPLIANCE

Country : UK

BRINK

Climate Systems

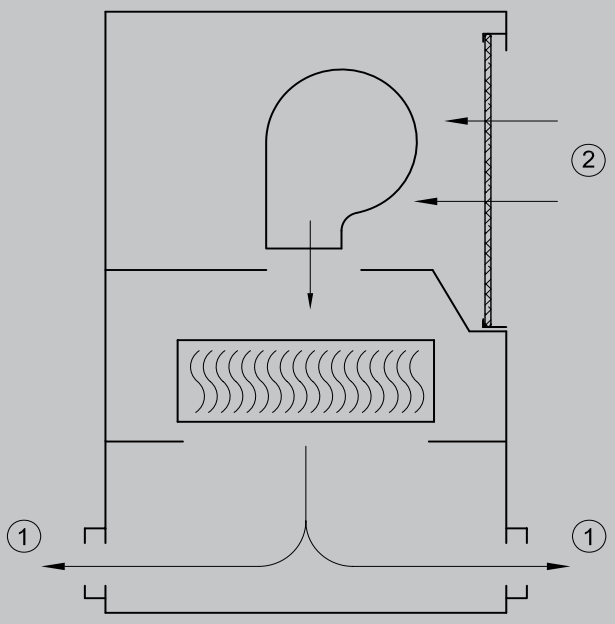
Tabel of contents

1.1 Standard version

An appliance from the Elan 25 series is an indirectly fired air heater suitable for installations where a hot water supply is available.
The appliance is also suitable for district heating.
The electric power consumption is reduced strongly because a direct current fan is used. This fan has a high electric efficiency under all conditions of use.
It is possible to combine the Elan 25 Downflow air heater with the heat recovery unit Renovent HR.
The air quantity is automatically adapted to the outlet temperature of the appliance. All this results in very stable room temperature, realising a perfect interior climate.
The appliance is available in a left-handed and a right-handed version.
A right-handed version has the filter door on the right.
The appliance comes as standard with frost safety. This provision ensures that the heat exchanger cannot freeze.
When the temperature downstream of the heat exchanger drops below 10 ºC, a switch ontact on the control unit is closed (see section 10.2). That can for instance be used to switch on a central heating pump to make (hot) water flow through the heat exchanger. If the temperature should still drop below 5 ºC, the system fan will be switched off.
The system fan will start running again if the temperature above the heat exchanger becomes higher than 30 ºC.
The appliance comes ready to plug in. When it is placed, the appliance must be connected to the system air channels, the condensate discharge (applicable if a Renovent is mounted) and the mains power.
It is possible to connect a ventilation switch.
This switch can be used to set the appliance in three different modes, see section 4.3 and section 10.3.

2.1 Upflow and downflow versions

The Elan 25 is available in a version with bottom output (Downflow) and in a version with top output (Upflow)



Downflow

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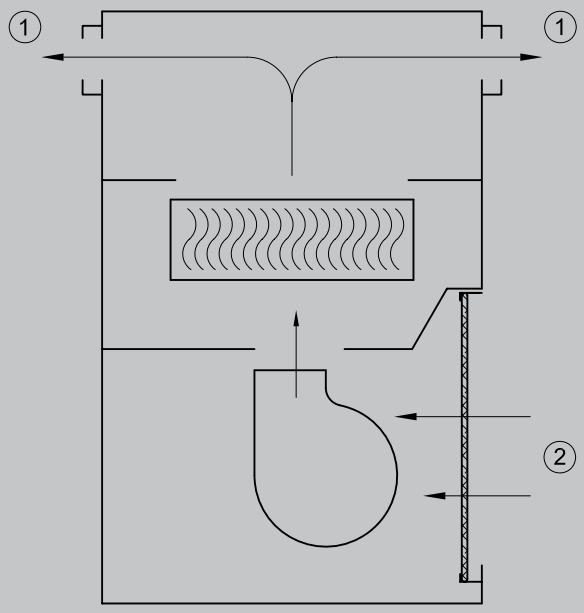

Upflow

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Figure 1: Basic diagram Elan 25

1 = Hot air
2 = Return air

2.2 Technical information

An air heater type Elan 25 is supplied for an installation were hot water supply is available.
The appliance comes with the CE mark and complies with the machine directive 89/392/EEC, the low-voltage directive. 73/23/EEC and the EMC directive 89/336/EEC.

	Nominal	Maximum
Air displacement [m^3/h]	1800	2200
Heating capacity [kW]	21,9	25,4
Water capacity [l/h]	956	1108
Waterside resistance [kPa]	2,24	2,94
Rated power fan [W]	315	460
Water flow [°C]	70/50	
Air input temperature [°C]	18	
Supply voltage [V~/Hz]	230/50	
Maximum operating pressure exchanger [bar]	16	
Water capacity exchanger [l]	3,26	
Protection degree	IP30	
Water connection (female thread) [”]	1	
Weight [kg]	62	

Correction factor heating capacity Elan 25 at other water and air input temperatures

Water flow [°C]	Air input temperature [°C]							
	Nominal				Maximum			
	+16	+18	+20	+22	+16	+18	+20	+22
90/70	1,58	1,53	1,47	1,42	1,59	1,54	1,48	1,42
90/50	1,26	1,20	1,14	1,08	1,25	1,19	1,13	1,07
70/50	1,05	**1,00**	0,95	0,89	1,06	**1,00**	0,94	0,89
50/35	0,61	0,55	0,50	0,44	0,60	0,55	0,49	0,44

3.1 Exploded view appliance

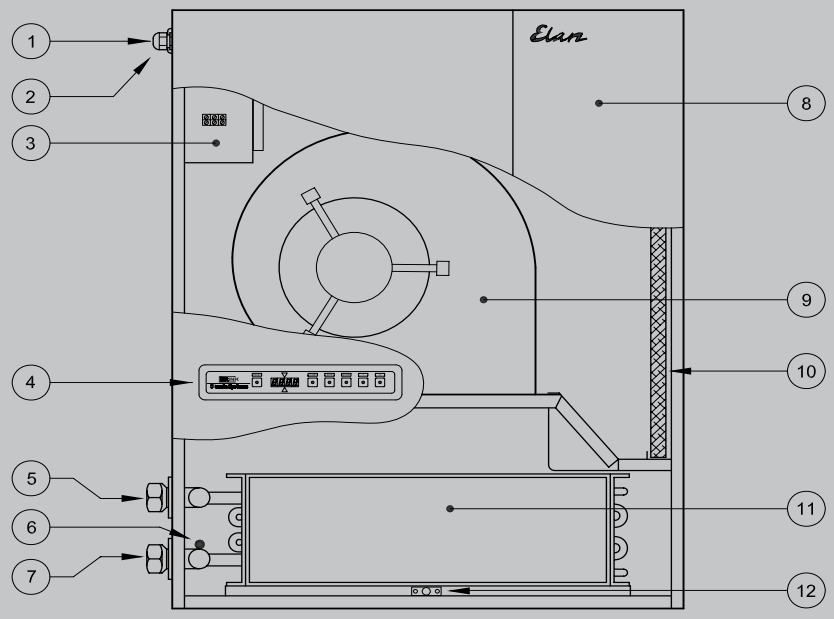

Figure 2: Location components Elan 25 R Downflow 5200-D

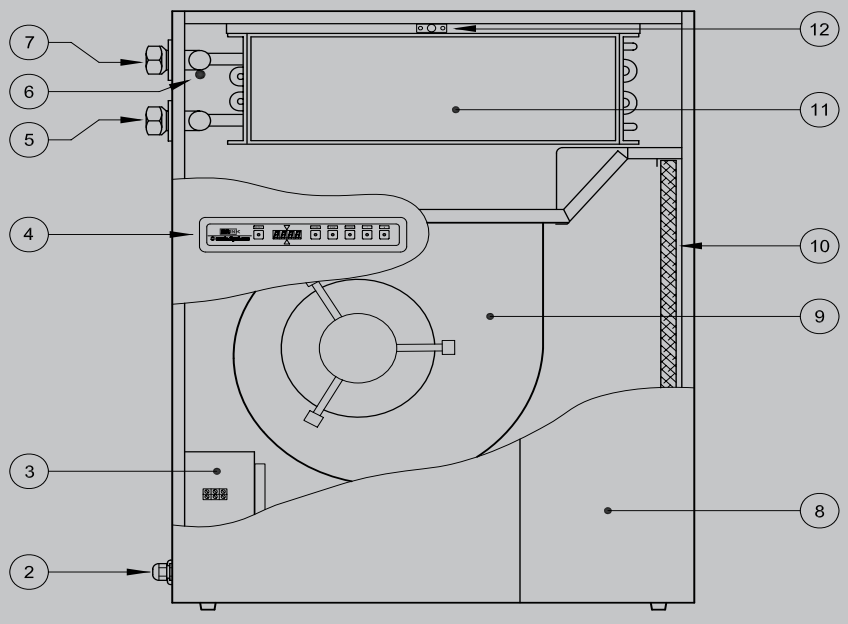

Figure 3: Location components Elan 25 R Upflow 5577-0

1 = Feedthrough condensate discharge heat recovery (if applicable)
2 = Feedthrough power cable 230 V
3 = Switchbox with control unit
4 = Operating panel
5 = Water connection (Return)
6 = Return temperature sensor
7 = Water connection (Supply)
8 = Filter door
9 = System fan
10 = Filter
11 = Heat exchanger
12 = System temperature sensor

3.2 Function components

1 Feedthrough condensate discharge	Feedthrough condensate discharge if a heat recovery appliance is placed on the Elan
2 Feedthrough power cable	Feedthrough 3-core power cable 230 V
3 Switchbox)	Box with electronic components for various controls and monitoring for safe operation of the appliance. It also contains the 20-pole connector for specific applications
4 Operating panel	The operating panel has a display for indicating several operational situations, a reset button for unlocking faults and keys for program settings
5 Water connection (Return)	Connecting the water return
6 Return temperature sensor	Sensor that measures the return air and, after switching on the frost safety, releases the control again
7 Water connection (Supply)	Connecting the water supply
8 Filter door	Opening it gives access to the filter
9 System fan	Arranges transport of air to the relevant rooms and sucks in the return air
10 Filter	Filters dust particles from the air and protects the system fan from fouling
11 Heat exchanger	This is where heat is exchanged to the air to be heated
12 System temperature sensor	Sensor that controls the system fan rpm and, if necessary, activates the frost safety

4.1 Outline description

Elan 25 is a highly advanced air heater for which special attention has been paid to achieving the lowest possible energy consumption. This is achieved through various electronic control systems and an electronically operated direct current system fan.
As a result of the application of a direct current motor in the system fan, even at low mother rpm the electric efficiency will remain high.
A microprocessor control unit controls and monitors the safe operation of the appliance. The system fan will steplessly transport more or less air, dependent on the appliance output temperature, which is measured continuously by the system temperature sensor. The system temperature sensor is placed under the heat exchanger.
The installer can set the maximum and minimum air quantity on the appliance operating panel just like an air quantity for free cooling. The electronic control in the system fan will ensure that the preset air quantity remains maintained, until the pressure in the air ducts has reached a preset maximum.

4.2 LED display system and operating panel

The Elan 25 has an operating panel on the outside. This operating panel can be used to call up and modify settings in the control unit program. The operating panel has six keys and a display (see figure 4).

Display

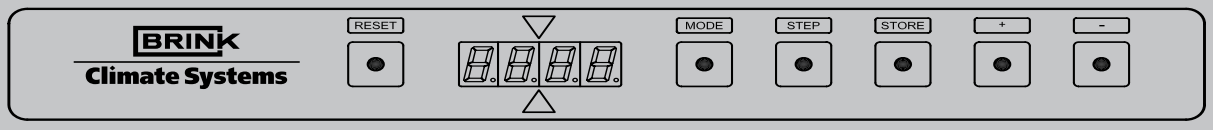

Figure 4: View operating panel

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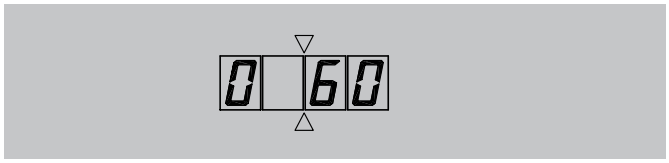
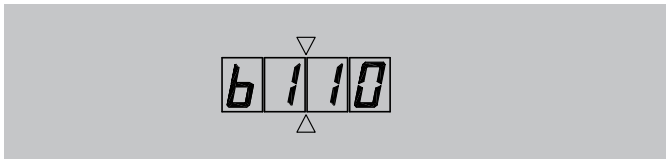
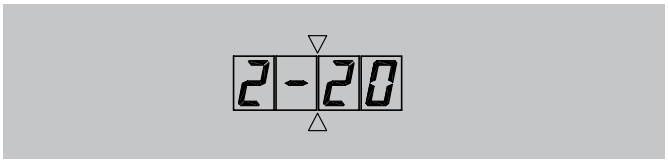
The display is composed of two sections; the left-hand section shows the program or the step number and the right-hand section, dependent on the program, a readout value, for instance temperature, (indicated here is the operating situation with an output temperature of 60 ºC).



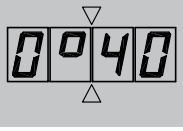
Numbers higher than one hundred are indicated on the last three 3 digits of the display (indicated is a temperature of 110 ºC at step number b).



Numbers below zero are indicated with a minus sign on the second digit of the display (indicated is an outdoor temperature of -20 ºC).



After adjusting the air quantity in the duct system, this initial situation will be stored in the memory of the control unit (see section 6.4, item 7). In addition, the permissible pressure increase in the duct system can be entered into the memory, if desired, by changing step no. 6 in the settings program into the desired pressure(see section 6.4, item 8). When subsequently the permissible pressure increase in the duct system is exceeded relative to the initial situation after adjustments or due to closing dampers or grates or a fouled filter, the maximum air output of the system fan will drop. That will make the pressure in the duct sytem decrease to the original value.
When this control system is active, that will be indicated with a 'o' on the top half of the second digit of the display.

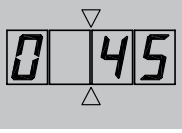


Keys

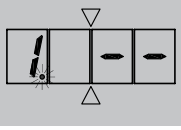
The six keys have the following functions:
MODE = selection key program,
STEP = increase the step number/programming,
STORE = store the setting,
+ = increase the setting,
- = decrease the setting,
RESET = reset key.

The 'MODE' key can be used to choose from a number of programs:

- operating situation,
  (also refer to section 7.2)

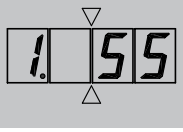


- readout program (dot blinking),
  (also refer to section 7.2)



- fault message (letter "F" and fault number blinking simultaneously),
  (also refer to section 7.3)

- setting program (dot lighted, step and readout value displayed alternately). (Only accessible for the installer after entering the access code, with the exception of step 1 up to and including 4, see basic settings appendix inspection report)



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As standard the display shows the standard operating situation, if a different program has been chosen, the appliance will automatically return to displaying the operating situation after some time.

In appendix "Inspection report" to these installation instructions, the installer can record the values set in the setting program.

4.3 Ventilation switch

If a ventilation switch is installed (connections 10, 11 and 12 on the 20-pole connector), the user can set the number of operating situations:

Position on 20-pole connector	
10-12	**Ventilation setting off (stand-by**) - System fan controlled by system temperature sensor; at no heat demand the system fan is stopped
-	**Comfort setting (regular)** - System fan controlled by system temperature sensor; at no heat demand system fan continuously at minimum air quantity
10-11	**Increased fan setting (high)** - System fan continuously on maximum preset air quantity

4.4 Cooling

An Elan appliance can be equipped for cooling. For that purpose an Elan cooling block must be placed in the air system, a condensing unit must be connected to the cooling block and a relay must be mounted on the Elan control unit (also refer to section 6.3).

When cooling is switched on, the system will always be running at the air quantity cooling (setting step 4). For switching on cooling, a connection must be made between terminals 8 and 9 on the 20-pole connector.

5.1 Installation general

5.1.1 Placing the appliance

Before opening the appliance, first pull the coloured filter door from the clamp; then you can unscrew the front cover. Take into account the following points when placing the air heater.

- Put the appliance as closely as possible to the water input/ output.
- Put the appliance as centrally as possible relative to the air ducts.
- Put the appliance at an accessible place with sufficient room for service.
- The hot water connections and the electric connections are as standard at the left for an Elan 25 R; for an Elan 25 L these connections are on the right.
- Put the appliance in a frost-free room.
- The air heater can be equipped with a free return.
  This means that the installation room has an open connection with the rest of the dwelling.
- On a damp floor the air heater must be placed at a raised level.
- Place the appliance vibration-free and level.

5.1.2 Free space around appliance

A number of requirements apply to the free space around the appliance.

- Leave room between the appliance and the wall and the ceiling.
- Always make sure there is a free space of at least 1 m at the front of the appliance with a free headroom of at least 180 cm because of maintenance.

5.1.3 Regulations

The air heater Elan 25 must be installed in accordance with:

- The safety regulations for central heating installations,
- The relevant articles of the Building Decree
- The safety regulations for low-voltage installations,
- Any additional regulations of the local utilities.
- The installation regulations of the Elan 25.

5.1.4 Hot water connections

The heat exchanger in the air heater is connected with the aid of a 1" connection.
When connecting the heat exchanger, be sure to hold the 1" connection to prevent it from rotating!

It is recommended to place stop cocks with couplings directly on the outside of the appliance in the input as well as the input lines.

5.1.5 Right-handed and left-handed versions

The Elan 25 is available in a right-handed as well as in a left-handed version.
An Elan 25 with a filter door on the right is referred to as an Elan 25 R, when the filter door is on the left the appliance is referred to as an Elan 25 L.
Because the right-handed and the left-handed appliances have different front panels, it is not possible to convert a right-handed appliance to a left-handed version afterwards. In addition, when changing the right-handed version to a left-handed version, the switchbox in the appliance is modified and moved and the position of the temperate sensors is changed.

5.1.6 Location heat recovery on Elan 25 Downflow

The Elan 25 Downflow is already prepared for placing a Brink heat recovery unit type Renovent HR on the appliance.
When placing the Renovent HR on an Elan 25 Downflow, it is assumed that the fronts of the two appliances are always kept in line and that the filter doors of the two appliances are mounted on the same side.
The connection “to dwelling” is connected at the top on the Elan 25 Downflow appliance.

The condensate discharge of the Renovent HR runs through the Elan 25 Downflow and comes out at the side of the Elan 25 Downflow. Mount the condensate discharge carefully to ensure that no condensate can enter the electronics of the Elan 25D. The appliance comes with a set of plates needed to seal a number of openings when a Renovent HR is installed. First unscrew the square cover plate on top of the appliance. The correct plate and the correct position are shown in figure 5.

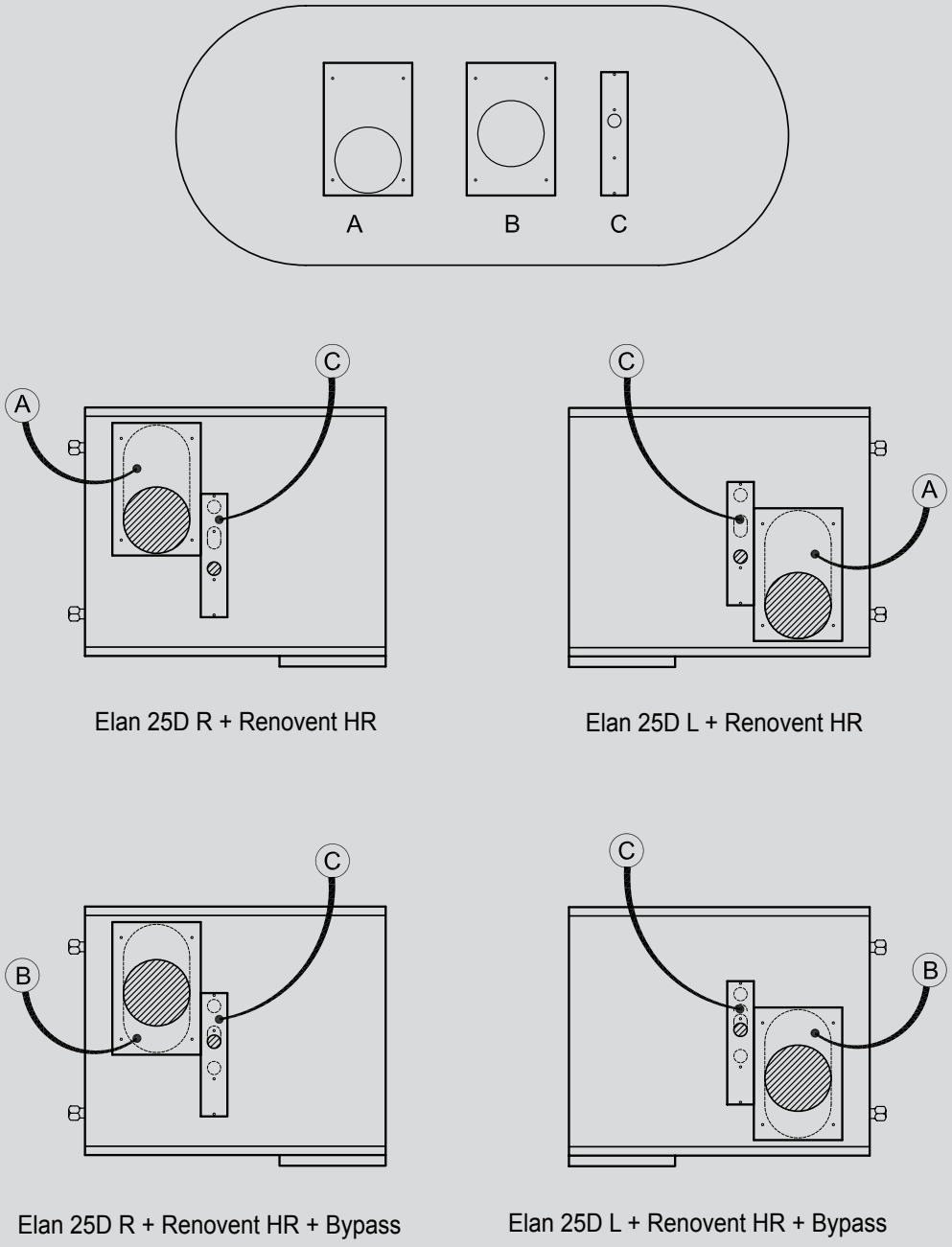

Figure 5 : Placing sealing plates when a heat recovery unit is used

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5.2.1 Assembly

Assembly of the hot air distribution box, and the air ducts is described in the Brink assembly manual.

5.2.2 Connecting ducts

Standard hot air distribution boxes are available for the Elan 25 series. For an Upflow these are placed **on the appliance** and for a Downflow they are placed **under** the appliance. The hot air ducts are connected to the hot air distribution box.

Observe the following points when connecting the ducts.

- Install a control damper in every branch of the hot air distribution box or the main duct.
- Insulate all hot air ducts including the grate shoes and the exterior air duct.
- Apply a moisture barrier around the insulation material to prevent takeup of moisture from the surrounding air.
- Always lay out return ducts in such a manner that they do not become sound bridges, so no straight connections between two rooms.
- Connecting the return
  Connect the return duct to the return air or the installation room. An acoustic return plate is available for an appliance with open return.
- Provide the exterior air connection with a control damper and connect it to the return duct.

More detailed information can be found in the guidelines stated in the Brink design manual and assembly manual.

5.2.3 Overview connection options Elan 25 Downflow R+L

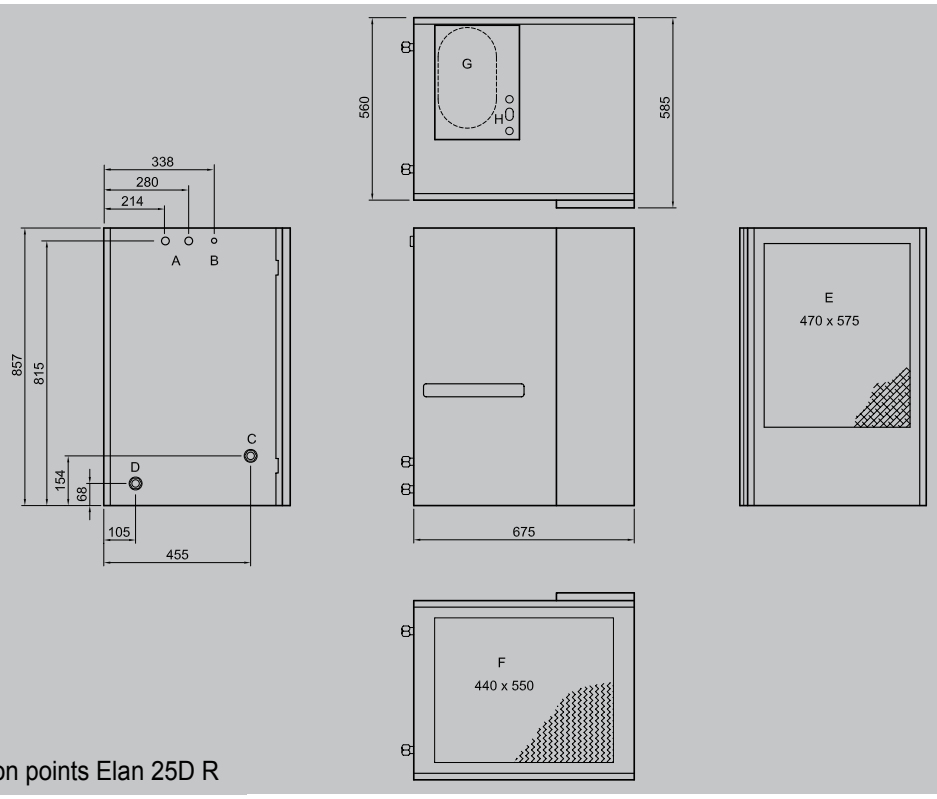

Figure 6: Connection points Elan 25D R 5242-B

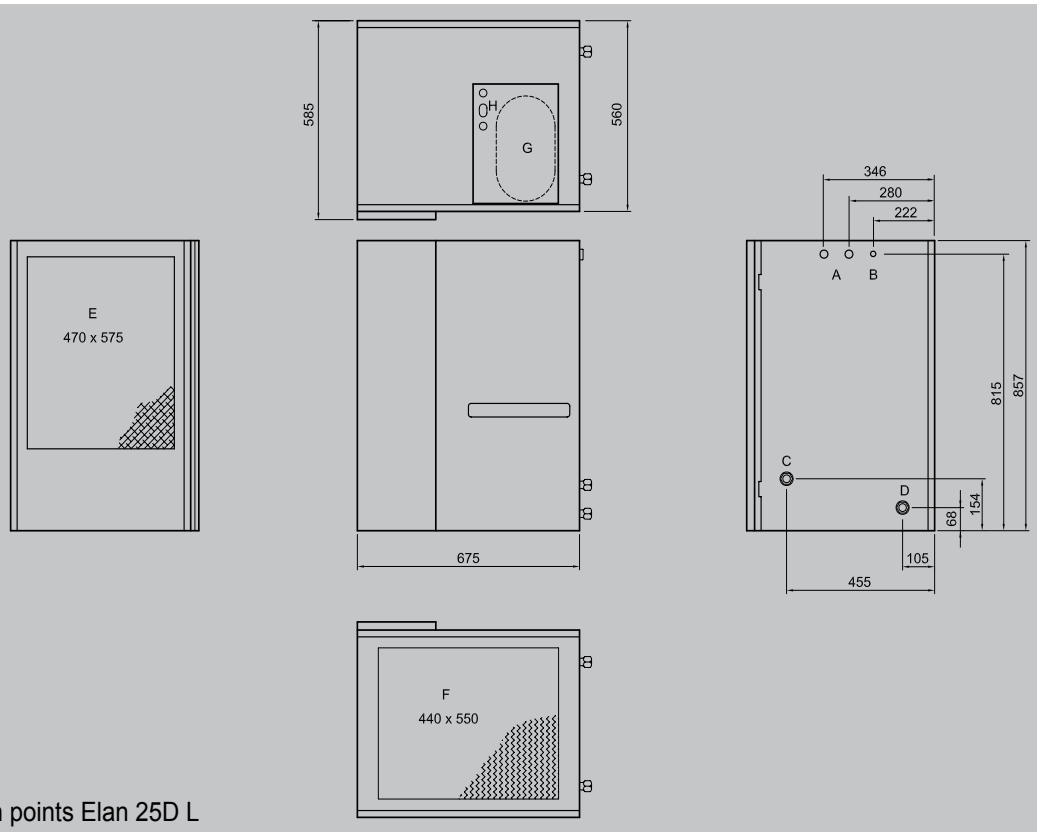

Figure 7: Connection points Elan 25D L 5305-A

A = Feedthrough condensate discharge heat recovery (Only if applicable)
B = Feedthrough power cable
C = Water connection (return)
D = Water connection (supply)
E = Input opening return air
F = Output opening
G = Connection heat recovery (only if applicable)
H = Feedthrough condensate discharge heat recovery (Only if applicable)

5.2.4 Overview connection options Elan 25 Upflow R+L

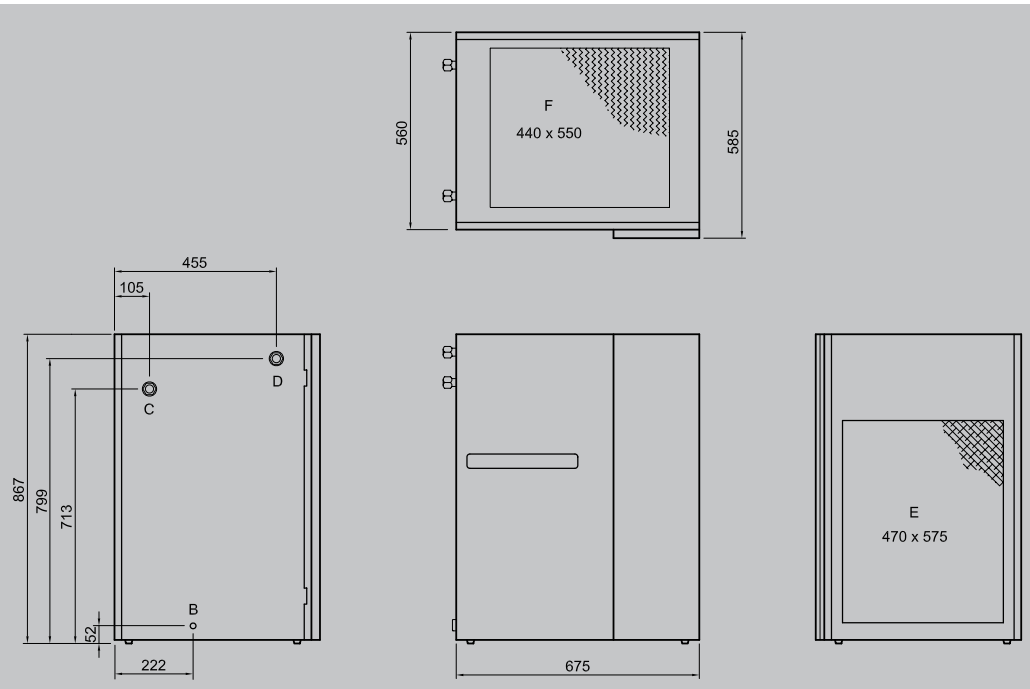

Figure 8: Connection points Elan 25 R 5561-0

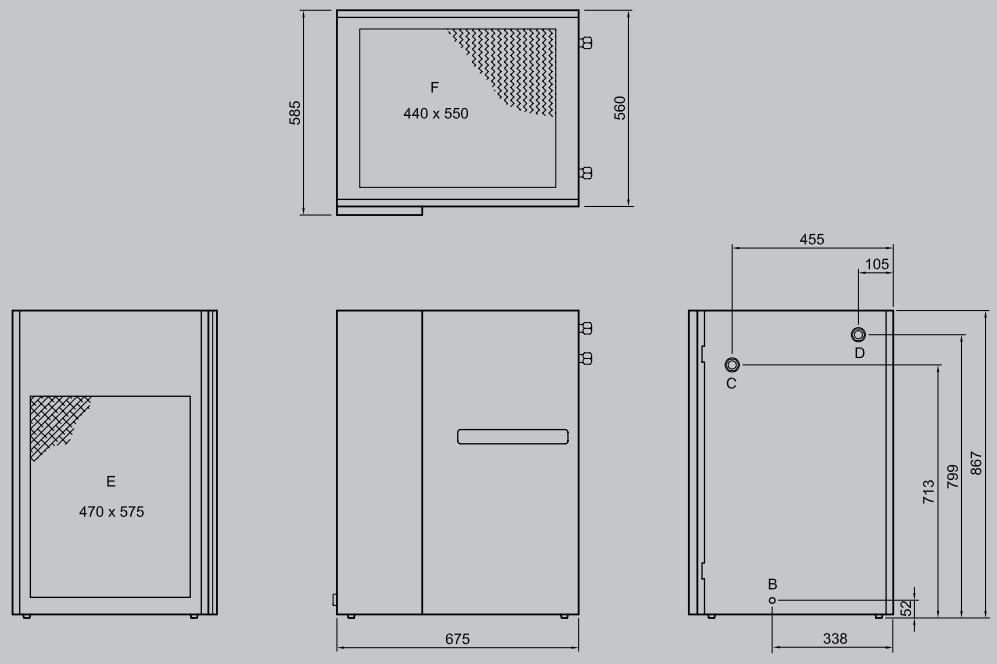

Figure 9: Connection points Elan 25 L 5560-0

B = Feedthrough power cable
C = Water connection (return)
D = Water connection (supply)
E = Input opening return air
F = Output opening

5.3 Condensate discharge Renovent HR

The Elan 25 Downflow is already prepared for placing a Renovent HR on the Elan 25. The condensate discharge of the Renovent HR must be carried outside through the Elan 25 Downflow. This feedthrough is always at the same side as the hot water connections, so for an Elan 25 R Downflow the condensate discharge is fed out of the appliance on the left. The condensate discharge pipe Ø20 is fed outside through a grommet; select the most suitable grommet; cut an opening into the grommet for feeding through.

For a correct operation of the appliance, the condensate discharge must have an open connection to the drain system, provided with a funnel and an additional water seal or siphon (see figure 7). The condensate discharge of the appliance must never be sealed.

Warning
When the appliance has been placed, the siphon must be filled with water.

Without any objection the condensate can be carried off through the interior drains.
Discharge to the gutter is not permitted because of the risk of freezing.

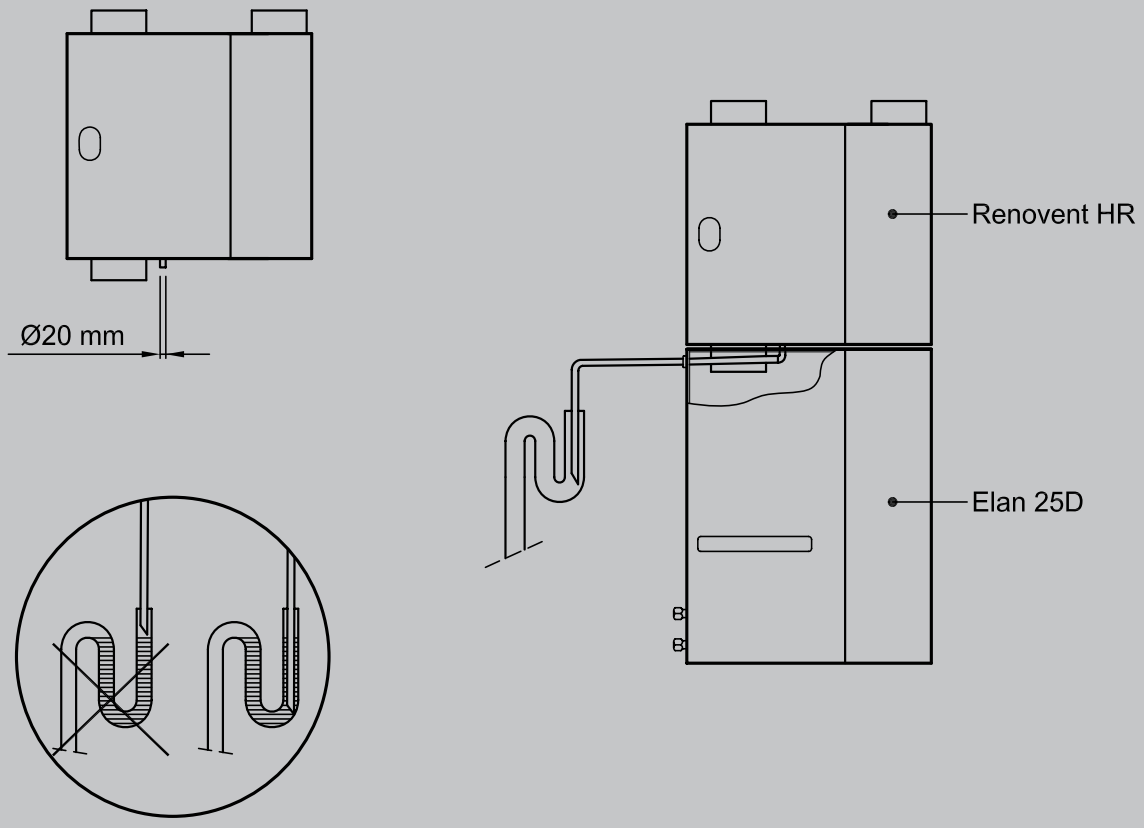

Figure 7: Connecting the condensate discharge to the interior drains

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5.4.1 Connecting the power mains

The mains plug must be connected to a power mains 230 V~50 Hz with earth. The connection must be an earthed wall socket. The wall socket must be accessible at all times. It is recommended to connect this supply to a separate end group, with fuse 16 A(T) inert. All mains wiring must be in accordance with the current I.E.E. Regulations, or the appropriate standards of your country and Must be installed by a suitably qualified person.

5.4.2 Connection cooling

If the Elan 25 is equipped with cooling, the control wires for the condensing unit must be connected to no.1 and no.2 of the 20-pole connector of the switchbox (see section 10.4). The Elan Series with cooling is described in more detail in het installation instructions with cooling.

The installer does have to place the cooling relay in the relay socket provided in the switchbox.

A separate air quantity can be set for cooling (see section 6.3).

5.4.3 Connecting the ventilation switch

It is also possible to connect a ventilation switch to the switch-box (see section 10.3). It allows the users to set a number of operating situations (see section 4.3).

6.1 Switching the appliance on and off

Switching on the appliance

1. Switch on the power.
2. Set the room thermostat at the desired temperature.
3. At increasing output temperature, the system fan will start transporting more air.

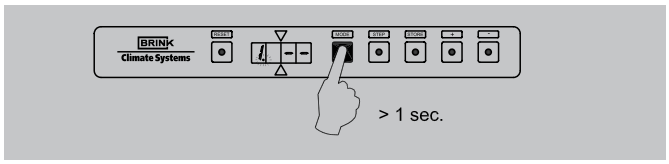
Switching off the appliance

1. Put the room thermostat 5 ºC lower than the ambient temperature.
2. Wait until the system fan is running at a low rpm or stopped, before switching off the power.
3. Switch off the power.

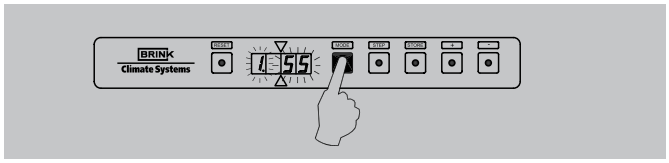
6.2 Setting the output temperature

Optimum performance of the Elan appliance requires that an output temperature is set as laid down in the design data.
This value can be modified in the **settings program**.

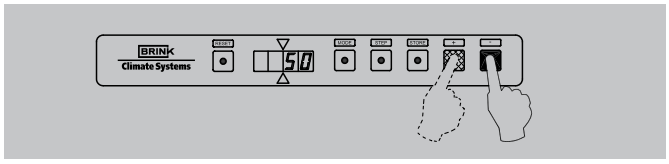
1. The output temperature can be set as follows. Press the 'MODE' key for longer than 1 second, until the dot in the left-hand display section is blinking. Now the display shows the **settings program**.



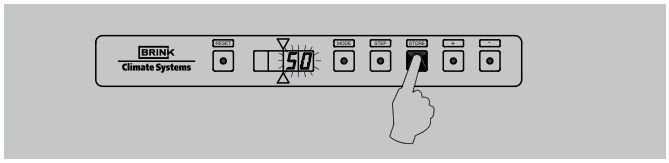
2. Press the 'MODE' key once more; a dot will light up in the left-hand display section. The setting number (with dot) and the readout value are now displayed alternately. The **settings program** is active now.



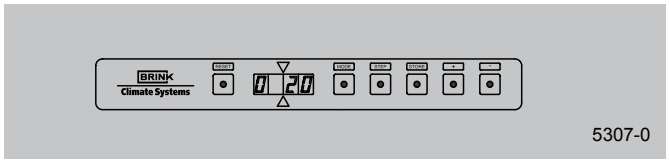
3. Change the setting into the desired value using the keys '+' or '-'. Refer to the table inspection report for the factory setting and the setting range of the output temperature (step no. 1).



4 Press the 'STORE' key. The set value will blink once to confirm that the changed value has been stored in the memory.



5. The display automatically returns to the operating situation after the 'STORE' key has been pressed.

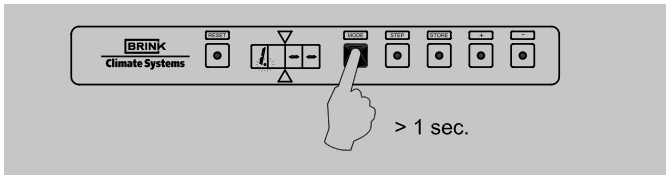


6.3 Setting the air quantity

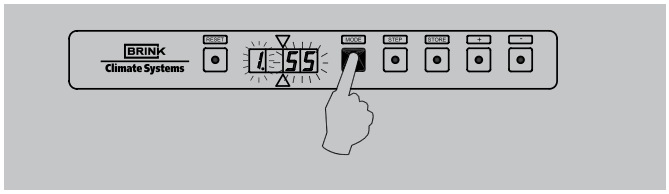
Three different air quantities can be set on the Elan 25 as required: a minimum and a maximum air quantity as well as a separate air quantity for free-cooling. The settings depend on the design data. An electronic control unit in the system fan ensures that the preset maximum air quantity is maintained until a increase in air resistance in the ducts has been reached (see section 6.4). From this point the air quantity is reduced until the original pressure after adjusting has been reached again. The air quantity will vary between the preset minimum and maximum air quantities, dependent on the output temperature.

Changing the minimum and maximum air quantities and, if applicable, the air quantity for free-cooling can be realised in the settings program as follows.

1. The air quantities can be set as follows. Press the 'MODE' key for longer than 1 second, until the dot in the left-hand display section is blinking. Now the display shows the **settings program**.

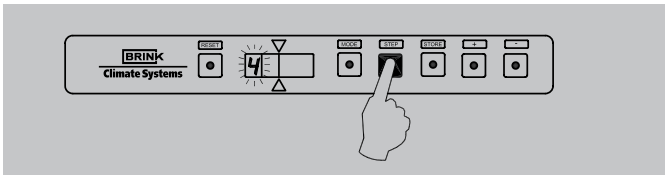


2. Press the 'MODE' key once more; a dot will light up in the left-hand display section. The setting number (with dot) and the readout value are now displayed alternately. The **settings program** is active now.

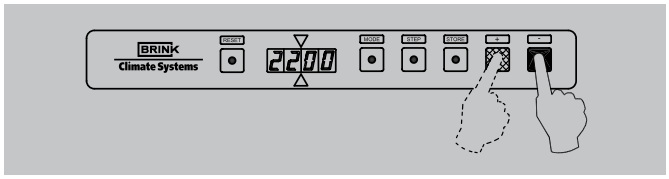


3 Use the 'STEP' key to select the desired step number
- step number 2 is minimum air quantity
- step number 3 is maximum air quantity
- step number 4 is air quantity for cooling

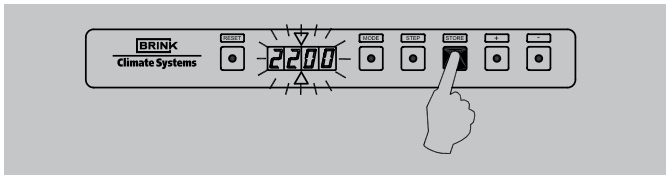
You can go one step number back with the 'RESET' key.



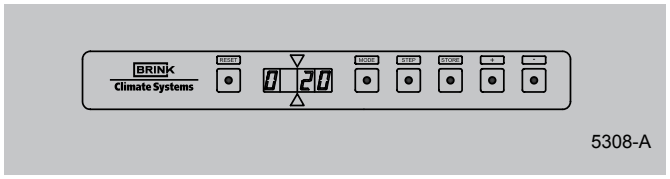
4. Change the various settings setting into the desired value using the keys '+' or '-'. Refer to the table inspection report for the factory setting and the setting range.



5. Press the 'STORE' key when all values have been set. The most recently set value will blink once to confirm that every changed value has been stored in the memory.



6. The display automatically returns to the operating situation after the 'STORE' key has been pressed.



6.4 Adjusting the air quantity on grates

Put the room thermostat 5 ºC higher than the ambient temperature.

1. Put the ventilation switch, if mounted, at position 'ventilation high', to achieve the maximum preset air quantity. If no ventilation switch is mounted, then make a temporary bridge between connections no. 10 and no. 11 on the 20-pole connector mounted on the switchbox. The system must be stable before you can continue adjusting.

2. Check the air quantity on all grates and dampers using an air flow or air rate meter or the following formulas:

$$\text{General: } \frac{m^3/h}{\text{free passage grate} \times 60} = \text{m/min..}$$

$$\text{For input grate 57 x 305 it applies: } \frac{m^3/h}{0{,}72} = \text{m/min.}$$

$$\text{For input grate 102 x 305 it applies: } \frac{m^3/h}{1{,}32} = \text{m/min.}$$

3. Start with adjusting the grates that show the largest positive deviation from the desired calculated air quantity. Repeat this for all grates.

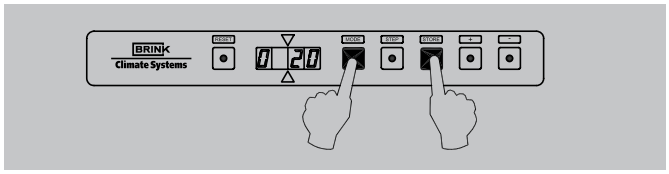
4. Finish by checking the grate that was adjsuted first and measureall grates again if there are deviations.

5. Use the adjusting screw to lock the maximum set opening of a grate, when the grate produces the desired air quantity.

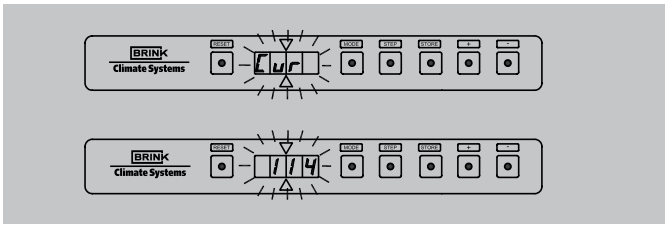
6. State the final damper positions on the duct.

7. Record the air quantity with the connected pressure of the system fan in the memory (= system curve) at a clean filter. If this is done at a fouled filter, the filter indication will be activated too late.

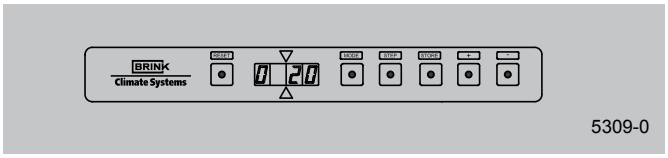
   7.1 The appliance is in operating situation.
   Now press simultaneously during 3 seconds the 'MODE' key and the 'STORE' key.



7.2 The display will intermittently show the blinking indication 'Cur' and the timer value (remaining time of 120 seconds). Now the control unit itself will determine the system curve; during that process the system fan will be running high for some time.

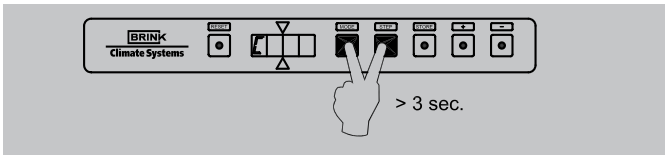


7.3 When the control unit has determined the system curve, it will automatically go back to operating situation.

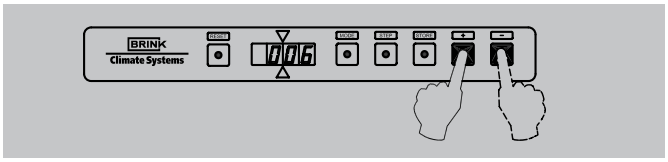


8. Adjust the permissible pressure increase in the duct system as in step number 6 of the settings program.

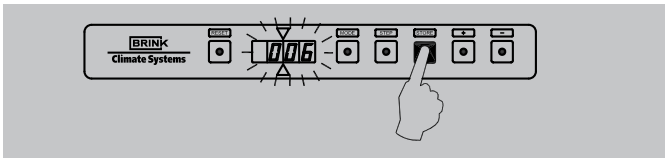
   8.1 First enter the access code to get beyond step 4 in the **settings program**. Simultaneously press the 'MODE' key and 'STEP' key for longer than 3 seconds, until C appears on the display; now the display is in the **code settings program**.



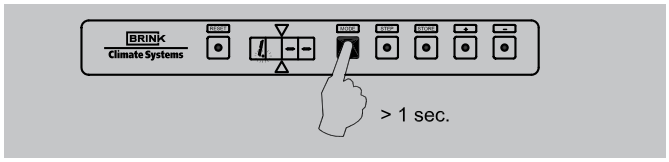
   8.2 Use the keys '+' and '-' to set the code to 006; starting with the '+' key.



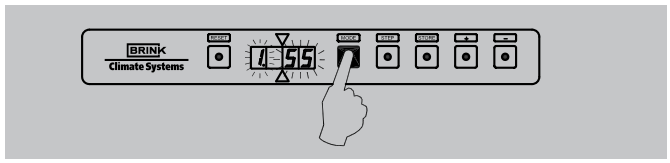
   8.3 Press the 'STORE' key to record this value; the set code will blink 1x and the 'C' 4x to confirm that the value has been set. Then the display automatically returns to operating situation.



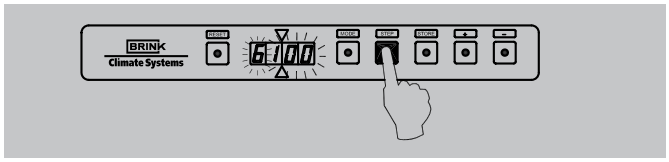
8.4 Now the permissible pressure increase can be set as follows. Press the 'MODE' key for longer than 1 second, until the dot in the left-hand display section is blinking. Now the display shows the **settings program**.



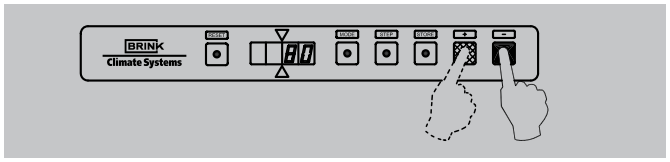
8.5 Press the 'MODE' key once more; a dot will light up in the left-hand display section. The setting number (with dot) and the readout value are now displayed alternately. The **settings program** is active now.



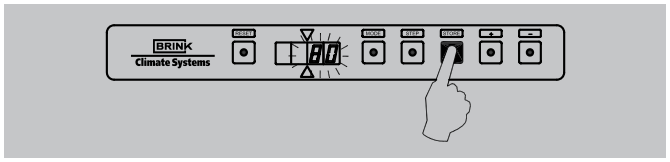
8.6 Step number 1 is on the screen, press the 'STEP' key to go to step number 6; you can also use the 'RESET' key to go 1 step back in the **settings program**.



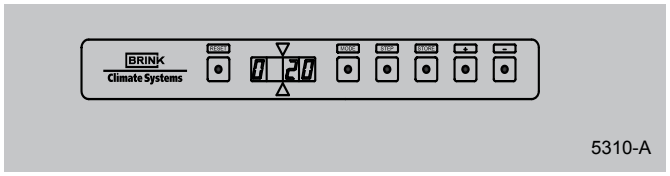
8.7 Change the setting 6 into the desired value using the keys '+' or '-'. Refer to the table inspection report for the factory setting and the setting range for the permissible pressure increase.



8.8 Press the 'STORE' key. The set value will blink once to confirm that the changed value has been stored in the memory.



8.9 The display automatically returns to the operating situation after the 'STORE' key has been pressed.



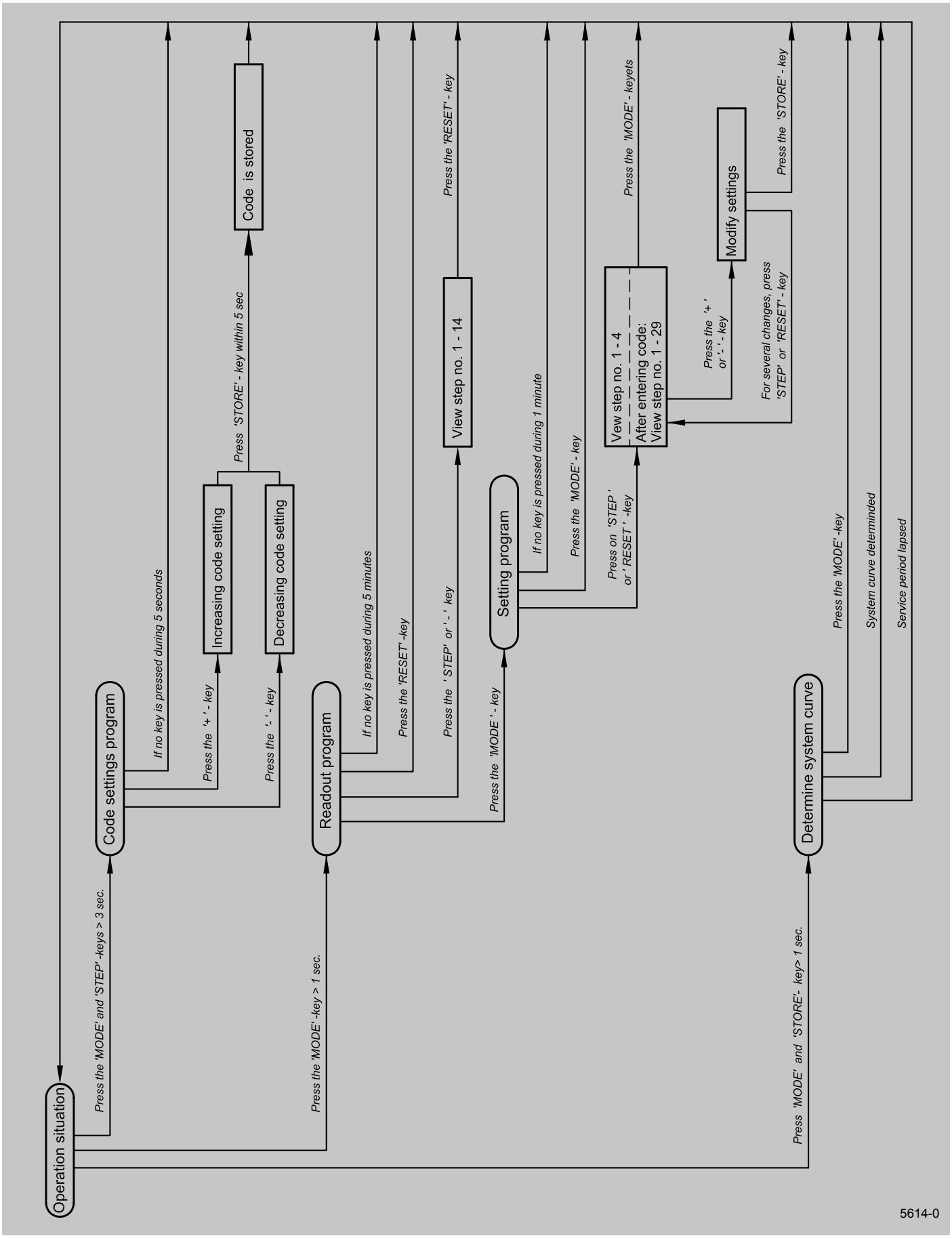
9. Remove the temporary bridge between no. 10 and 11 or put the ventilation switch back to 'normal'.

6.5 Other settings

It is possible to change more settings in the control unit program, if there should be reason to do so. These settings can only be changed after entering the access code.

Warning:
Because changes may disturb the proper performance of the appliance, changes of settings not described here require prior consultation with Brink.

6.6 Menu structure display



7.1 General explanation display

The display shows what the operating situation of the appliance is.
In addition, various settings can appear on the display.
The display has two sections. The left-hand section indicates the program or step number and the right-hand section gives a readout value dependent on the program (also refer to section 4.2).

Dependent on the selection with the “MODE” key, the following programs can be shown on the display:
- operating situation, see section 7.2
- readout program (dot blinking), see section 7.2
- settings program (dot lighted); refer to sections 6.2 to 6.6 for an explanation.

7.2 Readout normal operation

In operating situation the left-hand display section shows a step number, dependent on the situation of the appliance at that moment; the right-hand section gives the output temperature.

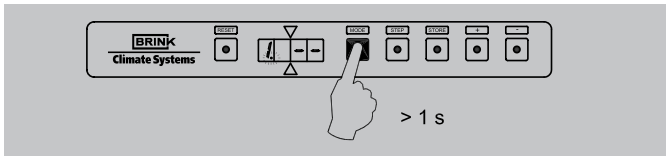
If the maximum permissible pressure increase in the duct system after adjusting is exceeded, the air output of the system fan will be modified.
When this control system is active, that will be indicated with a ‘o’ on the top half of the second digit of the display.

Step number	Description
0	Operating situation during normal program
-	
-	
-	
4	Frost safety active
-	
6	Cooling demand, cooling relay excited
7	Cooling demand, cooling relay not excited
8	Cooling demand, condensing unit not connected
9	Cooling demand, set cooling temperature has been reached
Cur	Determining system curve of system fan

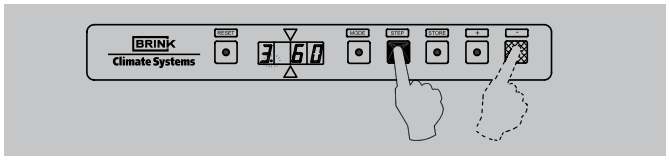
Readout program

The readout program allows the installer or user to call up a number of current sensor values to get more information on the operation of the appliance. The readout program can be displayed as follows.

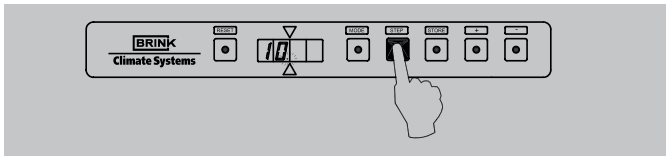
1. Press the 'MODE' key for longer than 1 second, until the dot in the left-hand display section is blinking. Now the display shows the settings program.



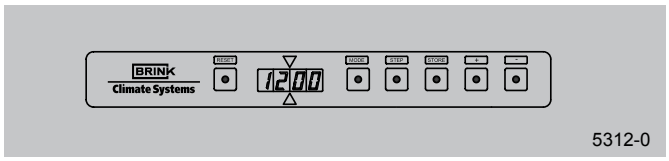
2. The program number and the readout value are displayed. The values of the readout program can be displayed with the keys 'STEP' and '-'.



3. If the readout value is greater than 2 digits, first. the step number is displayed during 1 second and then the readout value remains on the display



4. Press the reset key to leave the readout program; if during 5 minutes no key is pressed, the program automatically returns to operating situation.



Readout value	Description	Unit
1	N.a.	-
2	Temperature return temperature sensor	°C
3	Temperature system temperature sensor	°C
4	N.a.	-
5	N.a.	-
6	N.a.	-
7	N.a.	-
8	N.a.	-
9	Desired air quantity system fan	m^3/h
10	Current air quantity system fan	m^3/h
11	Current pressure system fan	Pa
12	N.a.	-
13	N.a.	-
14	N.a.	-

If a setting is not known or cannot be measured, the display shows the code '- - - -'.

7.3 Fault messages

The fault messages appear at the moment a fault occurs in the appliance.

Fault table locking code

fault number	Description	Consequence / Action
F02	Short-circuit return temperature sensor	- Replace return temperature sensor; reset appliance
F03	Short-circuit or interruption system temperature sensor	- Check / replace system temperature sensor in - Reset appliance
F30	Fault in parameters	- Reprogram parameters/replace automatic device - Reset appliance
F31/F32	Fault writing parameters	- Reprogram parameters
F33	Time problem automatic device	- Reset appliance / replace automatic device
F34	No correct fault code	- Reset appliance / replace automatic device
F35	Internal conversion fault automatic device	- Check sensors - Reset appliance
bF01	Communication fault system fan	- Check wiring, automatic unit and DVC interface
1Fnn/ 2Fnn	Alarm code system fan	- See table alarm codes system fan next page.
PP	Parameters correctly programmed	- Reset appliance

The fault table locking code gives a description of the fault numbers.
In the event of a fault, the display will show a blinking ‘F’ with a fault number. This fault number gives information on the nature of the fault. Fault numbers not included in the fault table indicate that an internal fault has occurred in the control unit. If after a reset still a fault number with regard to an internal fault is displayed, the control unit must be replaced.

A locking fault means that the control unit no longer responds to signals from the various sensors and no longer sends any signals. The fault number is on the display and if there is a temperature fault, the system fan keeps running. The locking fault can be removed by pressing the reset key. A blocking fault will solve itself or, when the situation last too long, will lead to a locking fault. A blocking fault calls up an ‘E’ on the display.

Switching off the mains power does **not** remove a locking fault (for reasons of safety). When the power is switched back on, the display again shows the same fault number. Switching on the appliance after a reset (or switching on the mains power), puts the appliance into switching on mode during some 10 seconds. Then the control system is released.

Fault table blocking code

Fault number.	Description	Consequence / Action
E03	Short-circuit or interruption return temperature sensor	Replace return temperature sensor; reset appliance
E05	Temperature system sensor high	Temperature must drop by its hysteresis
E06	Temperature system sensor low	Temperature must increase to ±10°C or reset appliance
E15, E16 & E17	Unacceptable code	Check parameters Reset the appliance
Eno	Incorrect blocking code	Momentarily interrupt 230 Volt power
bE01	System fan fault	Check wiring and selection system fan
1Enn	Block system fan	The code nn indicates the block number Refer to the alarm codes

Fault table alarm code system fan

Alarm code no.	Description	Consequence / Action
01	No detection system fan	Check for damage and selection system fan, check fan interface corroboration hand, if necessary, replace
02	No stable point reached when determining system curve	Determine again
04	Pressure too high	Check ducts, filters and dampers for blockage
08	System fan speed lower than 20 rpm	Check system fan and interface
16	System fan higher not possible (on fan curve)	Check ducts/dampers/filter for blockage 33: fault on detecting fan type 34: unable to read rpm 35: fault on detecting fan type 36: detected fan not supported 37: fault in data fans 38: fault in data fans 39: fault when impeller is loose 40: automatic mode requested without pressure or flow rate setting

8.1 Trouble shooting

F30 Problem internal check control unit
F33 1. Reset the control unit.
F34 2. Check the control unit, if necessary by connecting a different one.

F03 Fault temperature

1. Check whether the filter is fouled.
2. Check whether the system fan is running.
3. Check the cable loom and the plug connections of the system fan.
4. Check the settings, air quantities system fan.
5. Check whether the temperature sensor is active: at 25 ºC the resistance R is about 12 kΩ; the resistance R drops as the temperature sensor is getting warmer(< 12 kΩ).
6. Check that the temperature sensors are connected correctly.
7. Check whether the temperature sensors are placed correctly.
8. Check whether the temperature in the appliance and in the output duct are increasing simultaneously when the appliance is on.
9. Check the control unit.

Problem controlling cooling compressor

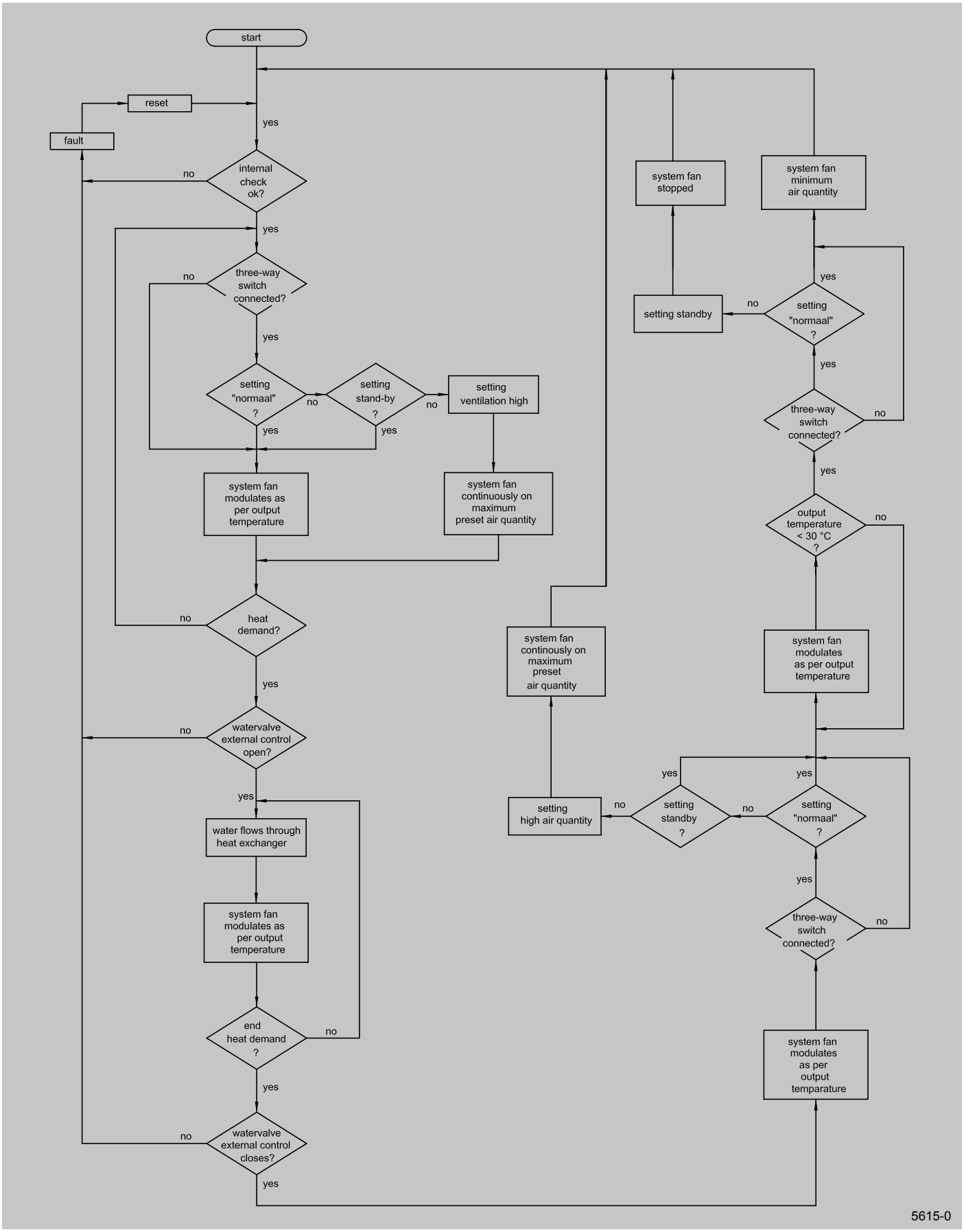
1. Check that the cooling relay is placed in the switchbox Elan 25.

Short-circuit

The control unit is equipped with a fuse;
Refer to section 10.1 for its location.

The low voltage circuit has two self-resetting fuses; when they have been triggered, it takes sometimes before they have “reset”.

8.2 Block diagram control and safety



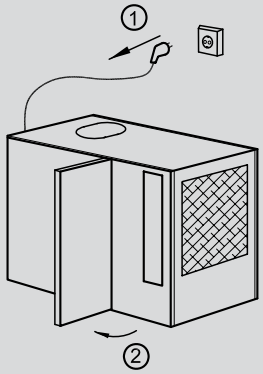
9.1 User maintenance

User maintenance is limited to periodically cleaning the filters. Dependent on the fouling degree it is recommended to check and clean the filters once a month.

If the filter is fouled or damaged, it must be replaced. Replace the filter at least once a year.
It is not permitted to use the appliance without filters.

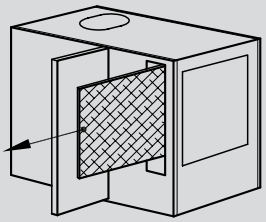
Cleaning the filters

①



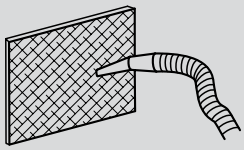
- Switch off the mains power.
- Open the filter door.

②



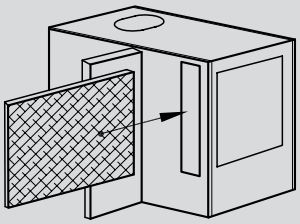
- Remove the filter, remember how the filter is taken out (e.g. white side inward).

③



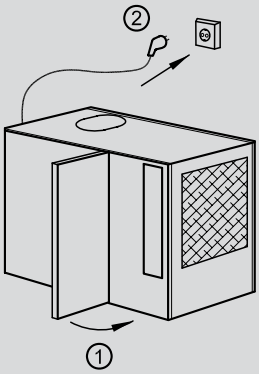
- Vacuum-clean the filter.

④



- Place the filter back in the same way as it was taken out.

⑤

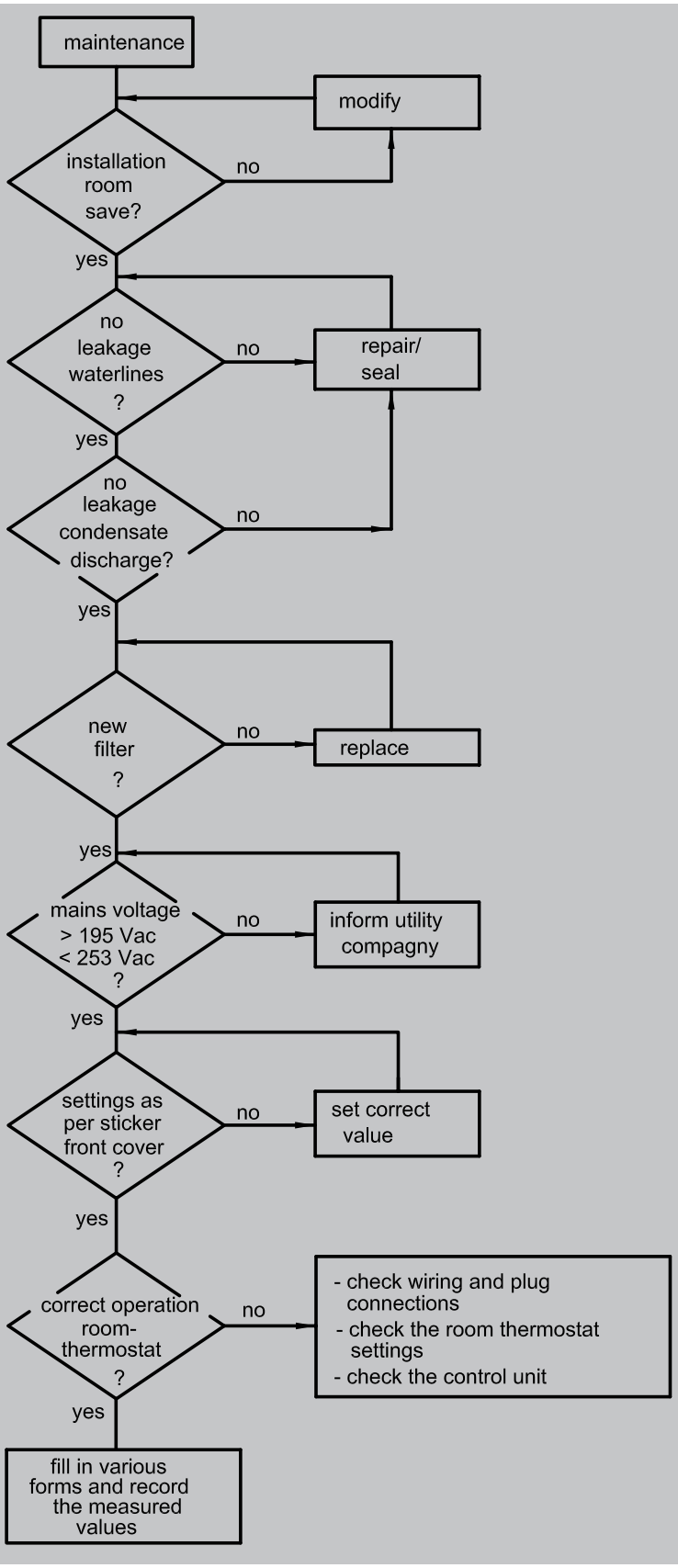


- Close the filter door.
- Switch the mains power back on.

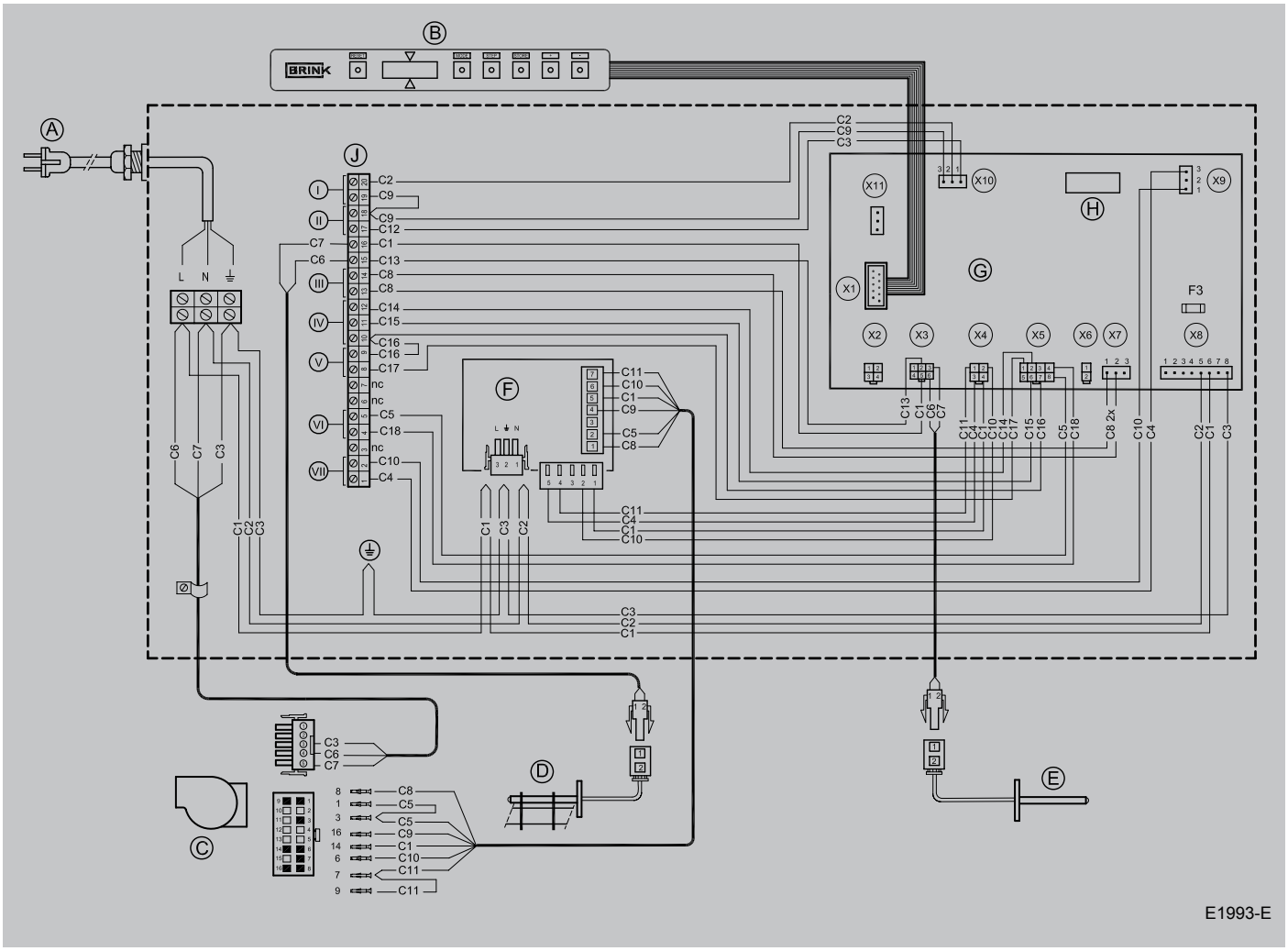
5203-0

9.2 Installer maintenance

Installer maintenance must take place once a year. Refer to the block diagram below for maintenance.



10.1 Wiring diagram

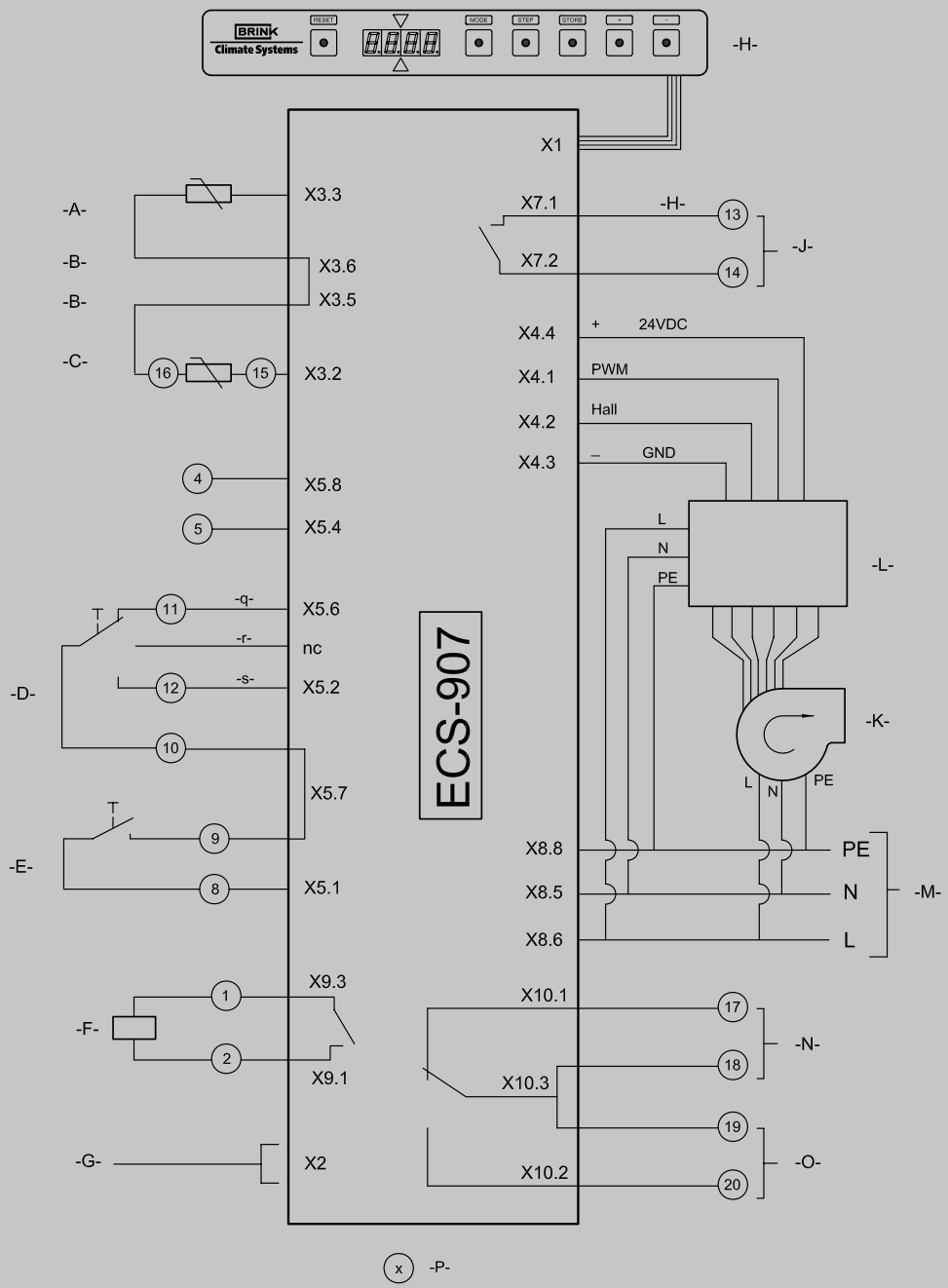


A = Mains power 230 V 50 Hz
B = Display and operating panel
C = System fan
D = Return temperature sensor
E = System temperature sensor
F = Interface system fan
G = Control unit ECS 907
H = Cooling relay socket
I = 20-pole connector

I = cooling demand
II = heat demand
III = frost safety
IV = ventilation switch
V = (free) cooling
VI = na
VII= Cooling switch contact

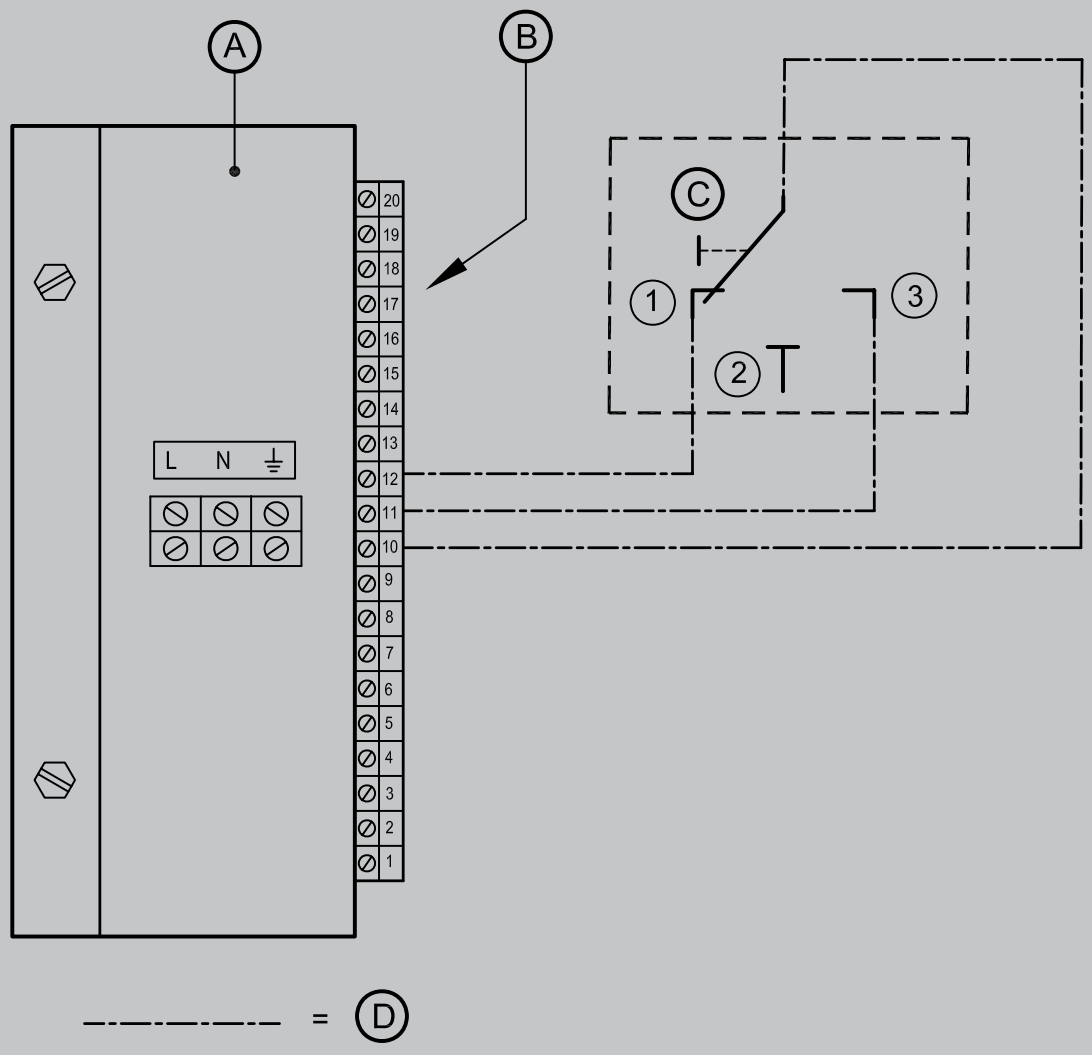
C1 = brown
C2 = blue
C3 = green/yellow
C4 = black
C5 = white
C6 = wire no.1
C7 = wire no.2
C8 = grey
C9 = red
C10= yellow
C11= green
C12= green/ white
C13= red/white
C14= blue/white
C15= purple/white
C16= orange
C17= purple
C18= black/white

10.2 Wiring diagram



A = System temperature sensor
B = GND (ground)
C = Return temperature sensor
D = Ventilation switch
E = (Free) cooling
F = Condensing unit
G = Connection plug for computer
H = Display
J = Frost safety
K = System fan
I = Interface system fan
M = Mains power 230 V 50 Hz
N = Heat demand
O = Cooling demand
P = Connections 20-pole connector
q = ventilation high
r = normal
s = stand-by

10.3 Connecting the ventilation switch

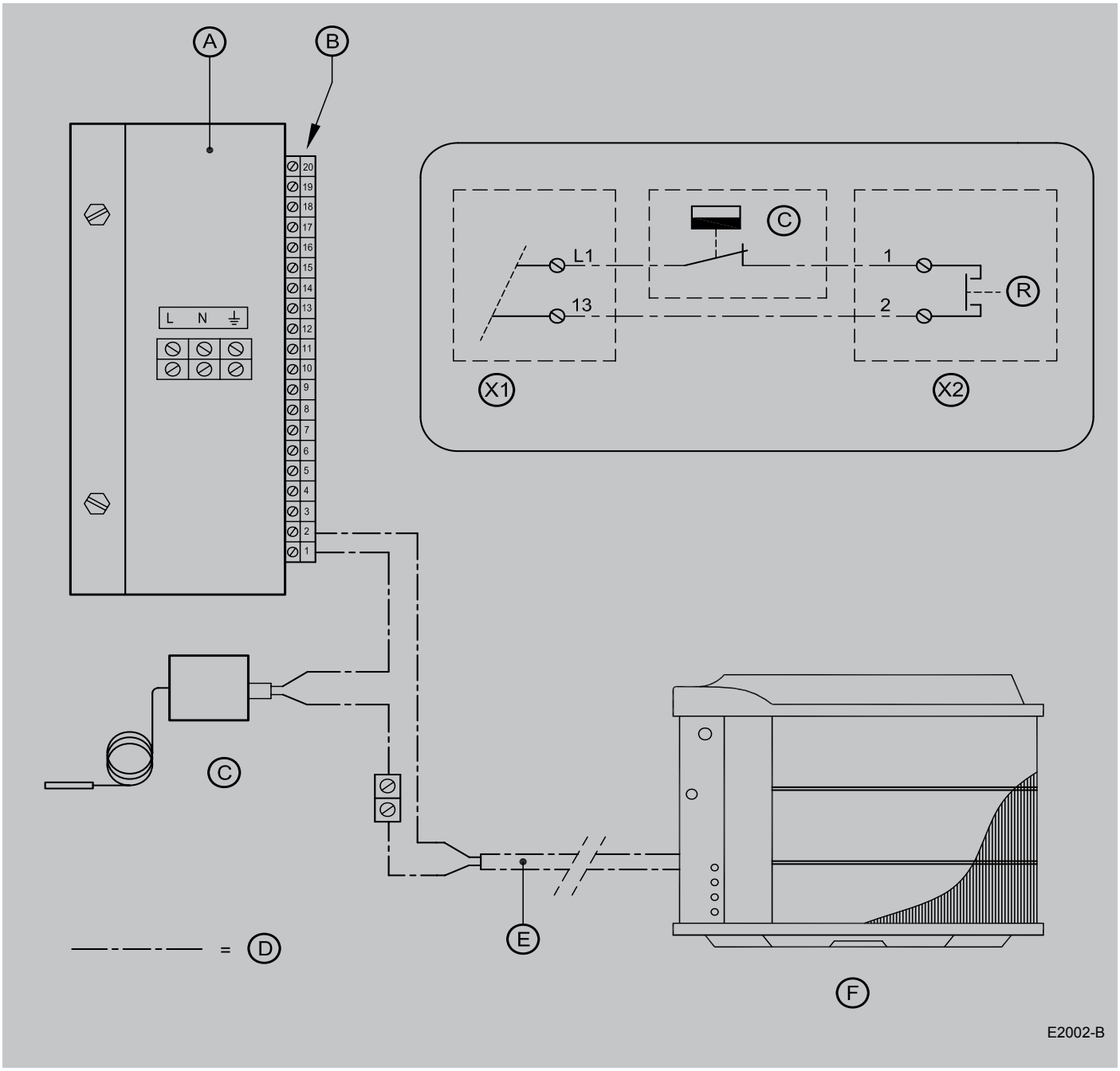


E2000-B

A = Control unit Elan
B = 20-pole connector
C = Ventilation switch
D = Wiring to be installed by installer

1 = stand-by
2 = normal
3 = high ventilation

10.4 Connecting cooling

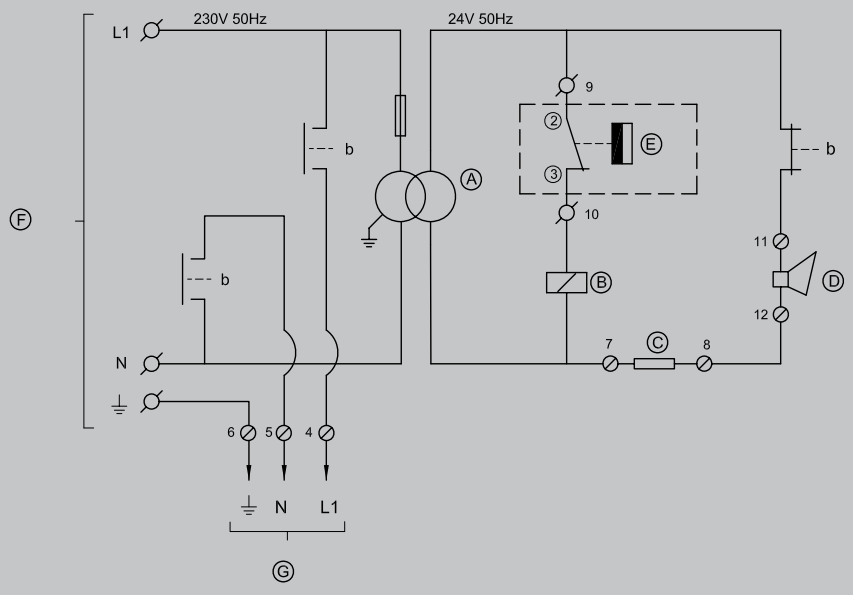


A = Control unit Elan
B = 20-pole connector
C = Defrosting thermostat (mounted on cooling block)
D = Wiring to be installed by installer
E = 230V cable
F = Condensing unit type WC cooling block
R = Relay contact cooling relay
The installer must place the cooling relay in the relay socket provided on the control unit print of the Elan appliance.
This relay comes with the cooling block.

X1 = L1 and 13 are connections in the condensing unit
X2 = No. 1 and no. 2 are connections 20-pole connector in Elan

10.5 Fire safety

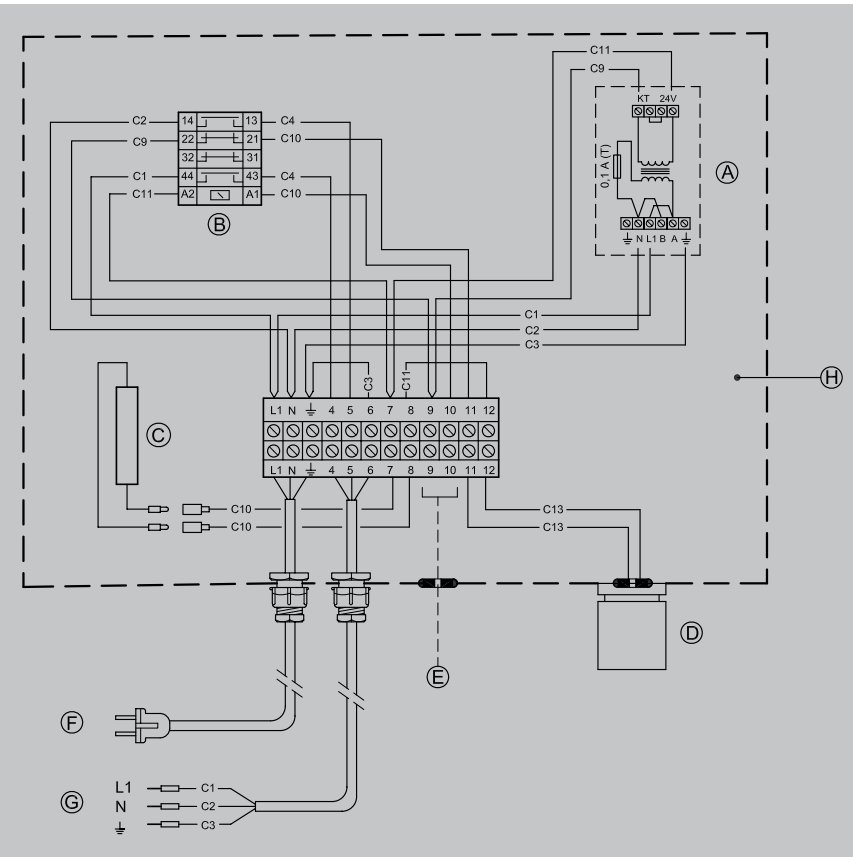
Optionally, a fire alarm kit is available for all air heaters Elan 25.
It is installed in the mains power of the air heater. A separate fire alarm is triggered when the ambient temperature rises above 32 ºC.
When the fire alarm is triggered, the mains power to the air heater is disconnected, while simultaneously an acoustic signal is activated.



E1447-B

Operating principle fire alarm

A = transformer 24 Volt 20 VA
B = relay
C = resistance
D = buzzer
E = fire alarm
F = mains power 230 Volt
G = air heater



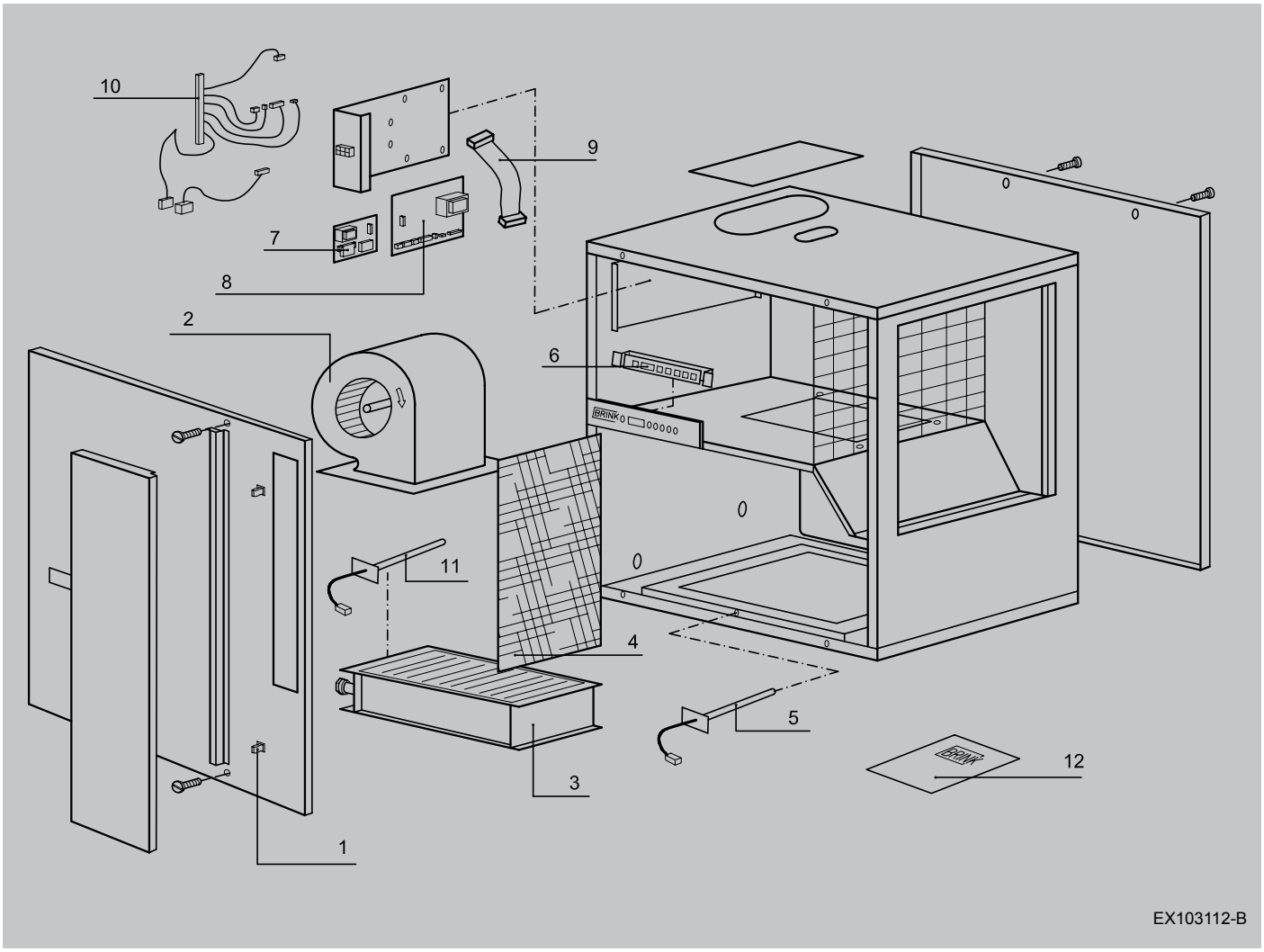
E1448-C

Wiring diagram fire alarm

C1 = brown
C2 = blue
C3 = green/yellow
C4 = black
C9 = red
C10 = yellow
C11 = green
C13 = red/white

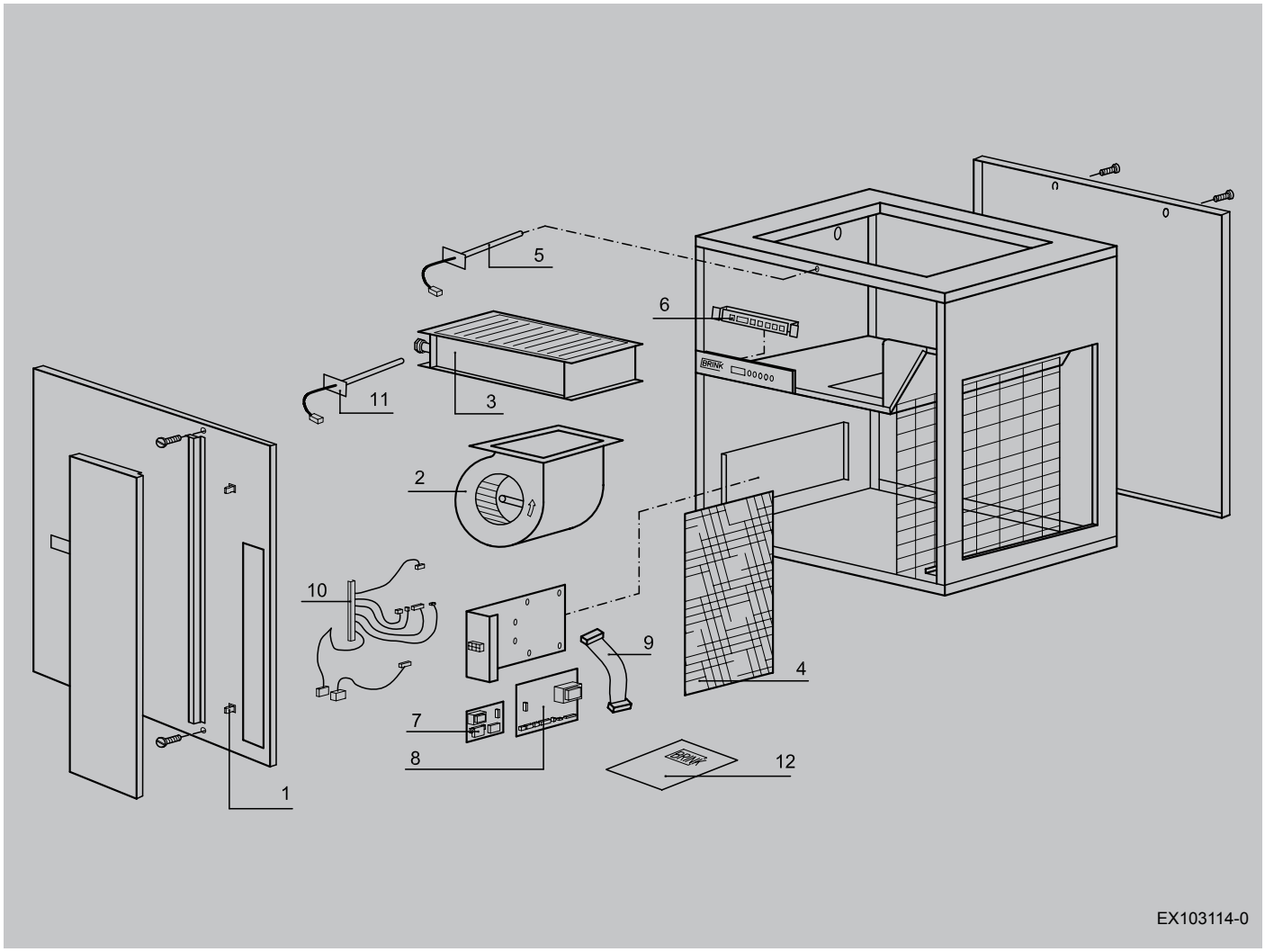
A = transformer
B = relay
C = resistance
D = buzzer
E = connection fire alarm
F = mains power 230 Volt
G = air heater
H = switchbox fire alarm

11.1 Exploded view Elan 25 Downflow



Article codes service articles Elan 25 Downflow		
No.	Article description	Article code
1	Door lock	531276
2	Fan	531044
3	Heat exchanger	531383
4	Filter	531385
5	System temperature sensor	531386
6	Display / operating panel	531401
7	Interface system fan	531402
8	Control unit	531421
9	Ribbon cable	531415
10	Cable kit	531423
11	Return temperature sensor	531386
12	Installation instructions	611353

11.2 Exploded view Elan 25 Upflow



Article codes service articles Elan 25 Upflow		
No.	Article description	Article code
1	Door lock	531276
2	Fan	531044
3	Heat exchanger	531383
4	Filter	531385
5	System temperature sensor	531386
6	Display / operating panel	531401
7	Interface system fan	531402
8	Control unit	531421
9	Ribbon cable	531415
10	Cable kit	531423
11	Return temperature sensor	531386
12	Installation instructions	611353

11.3 Service kits

If a part must be replaced, we recommend to state the connected article code when ordering the service kit, in addition to stating the air heater type, serial number, year of production, and the name of the part.

Example	
Series	: Elan
Appliance type	: Elan 25
Serial number	: 004859060801
Year of construction	: 2006
Part	: Interface system fan
Article code	: 531402
Quantity	: 1

Remark
Air heater type, serial number and year of construction; are stated on the type plate that is affixed to the appliance.

INSPECTION REPORT ELAN 25						
Step no.	Description	Basic setting	Computer code	Setting range	Mod. A Date:	Mod. B Date:
1	Max. output temperature	55	{4AA}	10°C to 70°C		
2	Minimum air setting	400	{4DC}	300 - 1800 m^3/h		
3	Maximum air setting	1800	{4DA}	800 - 2400 m^3/h		
4	Cooling air setting	2150	{4DB}	1000 - 2400 m^3/h		
5	n.a.	51	{4CA}	- - - -		
6	Max. pressure increase before pressure control is activated	100	{4DD}	0 - 510 Pa		
7	Time setting before pressure control is activated	600	{4DE}	0 - 2500 s		
8	Max. volume increase before volume control is activated	100	{4DF}	100 - 2000 m^3/h		
9	Time setting before volume control is activated	600	{4DG}	0 - 2500 s		
10	System fan minimum / off	0	{4CF}	00(on/off) or 01(on)		
11	Switch-off temperature system fan	25	{4AF}	20°C to 40°C		
12	Switch-on temperature system fan	30	{4AG}	20°C to 60°C		
13	Program selection normal/ outdoor air	00	{4CE}	00 = normal 03 = outdoor air program		
14	n.a.	- - - -	- - - -	- - - -		
15	Condensing unit resent yes/no	1	{4CB}	0 = not present 1 = present		
16	Max. time condensing unit on	60	{4CC}	0 - 255 minutes		
17	Anti-pendulum condensing unit	180	{4CD}	10 - 2550 s		
18	Switch-on temperature frost safety	10	{4AL}	-5 °C to 10°C		
19	n.a	- - - -	- - - -	- - - -		
20	n.a.	- - - -	- - - -	- - - -		
21	n.a.	- - - -	- - - -	- - - -		
22	n.a.	- - - -	- - - -	- - - -		
23	n.a.	- - - -	- - - -	- - - -		
24	n.a.	- - - -	- - - -	- - - -		
25	n.a.	- - - -	- - - -	- - - -		
26	n.a.	- - - -	- - - -	- - - -		
27	n.a.	- - - -	- - - -	- - - -		
28	n.a.	- - - -	- - - -	- - - -		
29	Correction return temperature sensor.	0.0	{4AK}	-5.0°C to 5.0°C		
Mod. A						
Mod.B						

DECLARATION OF CONFORMITY

The indirectly fired Elan air heaters type

Elan 25

manufactured by Brink Climate Systems B.V. in Staphorst,

bear the CE label and comply with the machine directive 89/392/EEC,

the low voltage directive 73/23/EEG and the EMC directive 89/336/EEC.

Brink Climate Systems B.V. warrants that the Elan air heaters

are manufactured from high-quality materials and that continuous quality inspections

ensure that they comply with the above directives.

Brink Climate Systems B.V.

N. Vroege, managing director

BRINK

Climate Systems

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